

U.S.S.N. 09/662,927

Filed: September 15, 2000

AMENDMENT AND RESPONSE TO FIRST (NON-FINAL) OFFICE ACTION

Please cancel claims 10-18, 20, 21, 24-26, and 29, without prejudice.

1. (Once Amended). A system for monitoring and responding to the environment of an implanted device comprising:

one or more sensors configured for monitoring data relating to variables selected from the group consisting of electrical, magnetic, mechanical, fluid flow, chemical, and thermal properties in the device or its environment in a patient, and

[monitoring and/or actuating means] at least one actuator configured for implementing a response to the monitored data in the device by causing a configurational change in the device.

3. (Once Amended). The system of claim 2 wherein the data storage means is configured to be placeable on the device or contiguous to the device or within or on the body of the patient.

7. (Once Amended). The system of claim 1 comprising an external input connected through loops to effectuate change in the device from [an] the at least one actuator [means].

8. (Once Amended). The system of claim 1 [wherein the] additionally comprising monitoring means [is] configured for positioning external to the patient.

9. (Once Amended). The system of claim 1 wherein the sensor is configured to detect [detects] changes in pH, temperature, ion concentration, or analyte concentration.

19. (Once Amended). The system of claim 1 comprising transmitting and receiving means to the [sensor] one or more sensors.

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22. (Once Amended). The [sensor] system of claim 1 [21] further comprising means for remotely accessing the data.

23. (Once Amended). The [sensor] system of claim 1 [21] wherein [the] at least one sensor is connected to means for transmitting or receiving data from a computer or phone communication means.

27. (Once Amended). The [sensor] system of claim 1 [or 21] wherein [the] at least one sensor [can be used] is configured to measure fouling of the device or at least one sensor over time.

28. (Once Amended). The [sensor] system of claim 1 [or 21], wherein [the] at least one sensor [can] is configured to measure protein deposition or formation of a bacterial film on a biliary stent, increase in calcification of a urinary stent, and neointimal thickening of an arterial stent, resulting in an increase in thickness, mass and wall shear.

30. (Once Amended). The system of claim 1 comprising:

- (a) one or more sensors for monitoring the general environment of the [implant] implanted device;
- (b) monitoring means; and

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(c) [actuating means for responding to the environment; wherein] the one or more sensors configured for communicating [communicate] information to the monitoring means and to each other, and [wherein the sensors communicate] configured for communicating commands to the actuator [actuating means].

31. (Once Amended). The system of claim 30 wherein the one or more sensors communicate information to a computer transmitting the information to another computer via the internet.

33. (Once Amended). An implantable device comprising:
one or more sensors configured for monitoring at least one condition;
at least one actuator configured for implementing a response to the monitored
condition in the device by causing a configurational change in the device; and
the one or more sensors and the at least one actuator configured for control by at
least one apparatus [interacting with] external [monitoring and/or activating means and a
computer] to the implantable device.